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Success unseen since the oil boom
Oklahoma doing well in high-technology field

By Rudy Alvarado

HAVE you ever wondered how Oklahoma is doing in technology? Wonder no more.

The state is creating sustainable, high-salaried jobs and wealth not seen since the days of the oil boom.

In the past five years, 10,864 high-paying jobs have been created in the state, jobs annually paying between $50,000 and $100,000. The industries contributing to this growth are in life-sciences, software, nanotechnology, sensors and telecommunications.

These efforts are supported by the state's source of knowledge workers and research centers — all tied together by OneNet, the state-operated fiber optics network that allows easy collaboration among university research centers.

Through the efforts of many leaders in academia, government and private industry, Oklahoma has been seeded with "industry clusters." These clusters, the building blocks of the emerging technologies, are bringing together Oklahoma City, Tulsa, Stillwater, Edmond, Norman, Ardmore and Lawton in the creation of sustainable, high-salaried jobs.

Technology clusters

There are seven significant clusters in Oklahoma.

One cluster has grown around the Oklahoma Health Center complex in northeast Oklahoma City, centered at Lincoln Boulevard and NE 10. Today, it employs 12,500 scientists, researchers and professionals, with an annual payroll of $556 million.

The base of medical research has expanded to cover biotechnology, bioinformatics, proteomics and nanotechnology. Several organizations are feverishly working to find the cause or cure to many diseases such as Alzheimer's.

On the western edge of this complex, the Presbyterian Health Foundation is clustering. The foundation is building world-class research offices. The number of high-quality biotech, research and medical companies moving into the park is proof of the progress being made.

This growth is the result of more than good fortune; rather, it is the result of clear, strategic thinking, planning and investment.

Another cluster, in Tulsa, has grown around two telecommunications giants: The Williams Companies and WorldCom. They are "magnets," attracting others in the telecommunications industry. The need to develop secured, intelligent Internet networks is opening opportunities to young, start-up companies.

The University of Tulsa has leaped ahead as a center of software security research. The

proof? It's doing work for our National Security Agency.

Norman is a cluster, centered around the University of Oklahoma. Exciting, cuttingedge research is taking place in chemistry, nanotechnology, computer science and severe weather research. For an example, we look no further than Dr. Bruce Roe, a world-renowned geneticist. He is part of the world team sequencing the human genome. His team sequenced chromosome 23.

Headline news? You bet. Science News reported Roe's work set the standard for genome research, with an accuracy exceeding 99.99 percent. Roe's research will attract biotech companies to Norman, as they explore the diagnostic and therapeutic applications of his work.

Stillwater, with Oklahoma State University, is another cluster. The research centers on bioagriculture, lasers, telecommunications, advanced sensors and nanotechnology. Edmond, another cluster, is rapidly becoming the headquarter center of information technology companies, supported by the resources of the University of Central Oklahoma.

Two clusters are in southern Oklahoma — in Ardmore and Lawton.

In Ardmore, the Noble Foundation is searching for ways to increase our food supply. Their research is producing extraordinary results, developing disease-resistant crops or increasing the yield per acre.

Lawton is the other cluster. The city houses many high-tech companies, around Fort Sill and Cameron University. These firms have core competencies in systems analysis, logistics, modeling and simulation software — technologies used in modern weapons systems.

Genesis of growth

In technology, 1998 will be remembered as a defining year. Gov. Frank Keating created a cabinet position for a Secretary of Science and Technology. Voters approved State Questions 680 and 681, unshackling Oklahoma's universities to allow them to participate in the fruits of their research. And the state created the Oklahoma Technology Commercialization Center (Tech Center) with the mission to commercialize the new technologies. In short, "to turn innovations into businesses."

Today, these legislative initiatives "fit like a hand in a glove." It is model legislation. They support the development of intel lectual, financial and human capital. In short, kick-starting technology initiatives. This legislative effort is the culmination of sound judgment, common sense and good government.

Technology champions

Every community has unrecognized champions. Oklahoma is no different. They come in all shapes and walks of life.

Oklahoma is fortunate to have state legis lative champions. On the senate side: Cal Hobson, Ben Robinson, Kelly Haney, Glenn Coffee and Mike Morgan. On the house side: Lloyd Benson, Abe Deutschendorf, Fred Morgan and Jack Bonny.

At the federal level, Congressman Ernest **Istook** has opened the federal pocket of medical research funding, from $3 million to $160 million per year (for a program known as EPSCoR). He is bringing research funding of benefit to all taxpayers.

In private industry, several names come to mind: Bill Hagstrom, Hershel Lamirand, Jean Gumerson, Bill Pirtle, Stanton L. Young, and Randy Goldsmith. Two business associations stand

out: Dick Burpee of the Oklahoma City Chamber and Dick Rush of the State Chamber of Commerce. Both organizations have strong, aggressive technology initiatives.

These individuals have one thing in common: They are passionate about wanting to leave Oklahoma a better place for the next generation.

The ultimate fertilizer

The ultimate goal is not to produce a bumper crop of "research clusters," but to benefit from their research, using their work to fertilize the state's technological soil. What technology seeds should be planted?

Seeds with two salient characteristics. First, technology that is "disruptive" with the potential to displace other sectors of the economy, in the same way semiconductors replaced vacuum tubes. The second characteristic is to embrace technology with "exponential growth" possibility.

Computers and Internet products or services are exponential growth industries that come to mind. By planting these seeds, our economy can grow faster than the rest of the country. However, we need to sustain this effort over a long period of time — 15 to 20 years. Silicon Valley didn't bloom overnight. It took 35 years.

Our "New Economy" rating

A report on the "New Economy," recently published by The Progressive Policy Institute, compared all 50 states. Five things were measured.

How did Oklahoma do? The report assessed Oklahoma's position as 46th in the digital economy, 41st in globalization, 38th in innovation, 29th in knowledge jobs and seventh in economic dynamism. Overall not bad. The State's ranking in economic dynamism is exceptionally high.

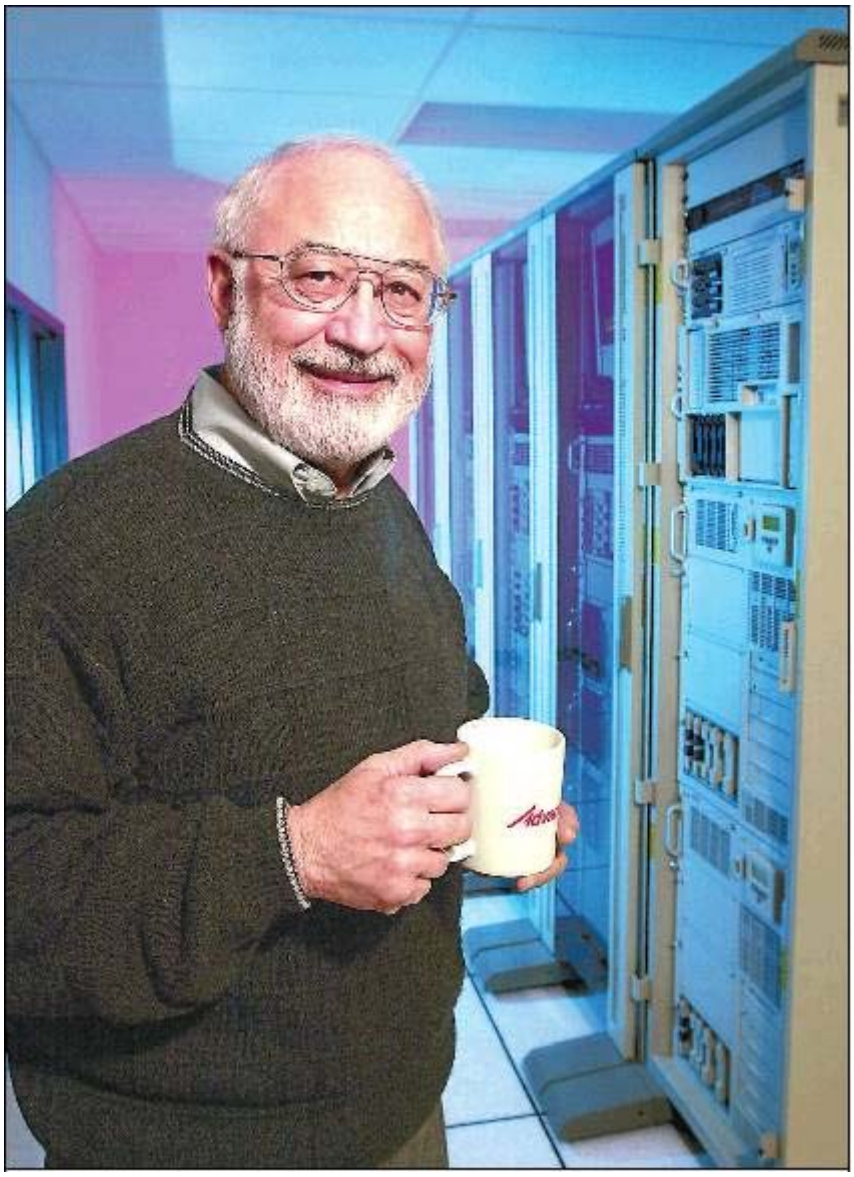
We rank only behind Nevada, California, Colorado, Arizona, New Mexico and Utah. We are running around in good company.

What's at stake

The health of our economy is as good as the proportion of high-salaried, high-quality jobs. To get there, state leaders are looking for exponential growth opportunities in biomedical, bioagricultural, nanotechnology, telecommunication, advanced software, sensors and lasers.

If we stay the course, the result will be to shift the nation's work force migration patterns. People will move to Oklahoma, attracted by high-paying tech jobs.

As Randy Goldsmith, president of the private, nonprofit Oklahoma Technology Commercialization Center, said: "So what is the message here? It is about jobs, growth, congressional representation, electoral votes and power. The starting gun has been fired on what is the equivalent of the great Oklahoma land run in science and technology.



STAFF PHOTO BY JIM BECKEL Rudy Alvarado is chairman of the board of Advancia Corp.